HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF
EDWARD F. WILLOUGHBY, M.D.,
OF LONDON;

AND

CHARLES HARRINGTON, M.D.,
INSTRUCTOR IN MATERIA MEDICA AND HYGIENE, HARVARD MEDICAL SCHOOL.

Toxicity of Alcoholic Beverages.

Dr. A. Jeffroy and Dr. R. Serveaux (*Archives de Médecine Expérimentale et d'Anatomie Pathologique*, 1895, p. 569) have devised a new method for determining the toxic equivalents of the various alcohols and other matters in alcoholic drinks. The liquids were injected into the circulation through the vein of the ear of rabbits, and in order to prevent clotting of the blood, which with other experimenters has always been a drawback, a watery extract of leeches was injected at the same time. This was obtained by macerating for four to six hours in dilute salt solution the anterior ends of leeches cut up into small bits. As a result of their experiments we have a table of equivalents which in some respects agrees with and in others disagrees with those of Dujardin-Beaumetz and Audigé. The toxic equivalents—*i. e.*, the amount in grammes necessary per kilogram to kill a rabbit—determined by their process were as follows:

	Dujardin-Beaumetz.	Jeffroy-Serveaux.
Methyl alcohol	7.00	25.25
Ethyl "	7.75	11.70
Propyl "	3.75	3.40
Butyl "	1.85	1.45
Amyl "	1.50	0.63
Aldehyd	1.00	1.14
Furfurol	....	0.24
Acetone	5.00	5.27

In other words, the poisonous properties increase with the boiling-point and molecular weight. The toxic equivalent of new (genuine) cognac was found to be 11.41; that of apple brandy 10.57. Absinthe appeared to be extremely toxic, about like furfurol and amyl alcohol.

Dr. G. Daremberg, experimenting in the same line (*Archives de Médecine Expérimentale, etc.*, 1895, p. 719), found that, in general, reckoning from equal alcoholic content, the alcoholics are injurious in direct proportion as they are natural and least adulterated. If rectified spirits have been added, they become relatively less poisonous, since the particularly injurious matters, the higher alcohols, furfurol, aldehyd, etc., are especially present in natural wines and in spirits obtained by distillation of such wines. Thus cognac, the pure article, is more toxic than the artificial substitute made with pure alcohol. For instance, an old genuine cognac contains about 2 per cent. of impurities, chiefly fatty acids, as acetic, higher alcohols, as amyl alcohol, aldehyds as furfurol or pyromucic aldehyd; and all of these are much more poisonous than the ordinary ethyl alcohol. Apple brandy is more toxic than cognac, anisette and angostura bitters very toxic, and absinthe the "plus terrible des apéritifs." His conclusions are that of all alcoholic drinks the most dangerous are the liqueurs such as absinthe and anisette, the least harmful those made with pure alcohol and non-toxic flavors and without essential oils; that wines are proportionately more toxic than brandy, and white wines less than red.

Dr. J. Roubinowitch (*Gazette des Hôpitaux*, 1895, p. 237), speaking of the greater toxicity of alcohols with increase in the molecular weight, calls attention to the fact that the beverages distilled from cider, perry, grains, potatoes, and molasses are much more injurious than those derived from wine. In dealing with the question of restricting the use of alcohol by legislation, Dr. Roubinowitch, after considering the various methods, such as increasing the tax on alcohol, restricting the number of licenses, the Norwegian system, etc., concludes that the system of total prohibition is the best, and falls into the curious error of citing the results of the prohibitory laws of Maine as a most convincing argument, when, as is well known, Maine is practically a "free-rum" State. "Ce fut pour l'état du Maine une révolution des plus heureuses, puisque en peu d'années cet état, le plus pauvre de l'Union Américaine devint l'un des plus prospères."

Infectiousness of Dust in Consumptive Communities.

Dr Irvin H. Hance (*Diebetic and Hygienic Gazette*, February, 1896, quoting from *Medical Record*) has conducted some instructive experiments to determine the danger of infection in a large community of consumptives, where all sanitary measures for the care and disinfection of sputa are enforced. These experiments were performed at the Adirondack Cottage Sanitarium, and a complete examination was made of the group of buildings, some of which had been occupied by consumptives for eleven years. Dust was taken from the places most likely to be infected. One square yard of dust from each of four buildings (the main building containing parlor, sitting-room, and library, the infirmary where all the acutely sick are sent, the oldest cottage and the newest) was collected and inoculated into ten guinea-pigs, and half a square yard from each of thirteen other cottages was collected and inoculated into others. The animals were kept from one to three months and then killed. In all, eighty-one were inoculated with from two to three cubic centimetres of sterilized water with the dust in suspension. Four inoculated with dust from the infirmary and main building died of other infectious diseases on the third to sixth day. Five of the ten inoculated with dust from the oldest cottage, which was always occupied by the sickest men, one of whom had been complained of by his room-mate for spitting about the cottage, were tuberculous. The dust from the other sixteen buildings occupied by consumptives was found to be absolutely free from infectious material. At this Sanitarium the methods taken to guard against infecting the cottages and public rooms are to burn all cuspidors daily and the Japanese napkins as soon after using as possible; never to expectorate except into the large sanitary cuspidors or into the small individual hand-cuspidors. Paper